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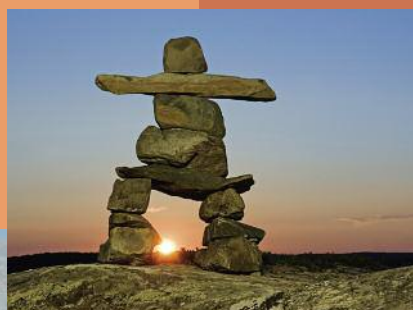
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FIRST NATIONS AND INUIT HEALTH BRANCH

RESEARCH & MONITORING SECTION ENVIRONMENTAL RESEARCH DIVISION

ANNUAL SUMMARY REPORT 2007–2008



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Research and Monitoring Section
Environmental Research Division
Primary Health Care and Public
Health Directorate
First Nations and Inuit Health Branch
Health Canada

Health Canada is the federal department responsible for helping Canadians maintain and improve their health. We assess the safety of drugs and many consumer products, help improve the safety of food, and provide information to Canadians to help them make healthy decisions. We provide health services to First Nations and Inuit communities. We work with the provinces to ensure our health care system serves the needs of Canadians.

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Table of Contents:

Activities	2
Major Accomplishments	4
Additional Research and Related Activities	9
Priorities and Plans for 2008-2009	10
Organizational Chart	12

INTRODUCTION

The key objectives of the Environmental Research Division (ERD), First Nations and Inuit Health Branch (FNIHB) are to conduct, coordinate and fund environmental contaminants-related research in collaboration with First Nations and Inuit organizations, FNIHB regions and the Department of Indian and Northern Affairs Canada (INAC). The Research and Monitoring Section (RMS) coordinates and funds community-based environmental health research aimed at assisting First Nations and Inuit in assessing the extent of potential health impacts resulting from exposure to environmental pollutants; facilitates knowledge transfer, risk assessment and risk communication related to environmental health research for Aboriginal communities, health authorities and stakeholders; and also provides advice to Health Canada's senior management on environmental health research issues.

MISSION

TO HELP FIRST NATIONS AND INUIT IMPROVE THEIR HEALTH AND WELL-BEING BY BUILDING AND SUPPORTING THEIR CAPACITY TO IDENTIFY, UNDERSTAND AND, WHENEVER POSSIBLE, REDUCE THE IMPACT OF EXPOSURE TO ENVIRONMENTAL CONTAMINANTS THROUGH COMMUNITY-BASED RESEARCH, RISK ASSESSMENT AND EDUCATION.



Activities

Environmental Contaminants Research

RMS focuses on community-based research and knowledge development on the extent of First Nations exposure to environmental contaminants of concern such as persistent organic pollutants and heavy metals, as well as emerging chemical contaminants. RMS conducts research and participates in two national research programs: the First Nations Environmental Contaminants Program and the Northern Contaminants Program. RMS analyzes the outputs generated from this research and works on the synthesis and knowledge translation of this information for First Nations, Inuit, senior management, and the general public.

First Nations Environmental Contaminants Program

The First Nations Environmental Contaminants Program (FNECP) was established in 1999 to assist Canada's First Nations Peoples in assessing the extent of their exposure to environmental contaminants and the potential for associated risk to their health and well-being. The FNECP consists of a national component (the National First Nations Environmental Contaminants Program – NFNECP) and a regional component (the Regional First Nations Environmental Contaminants Program – RFNECP). The RFNECP is administered by the Regional Environmental Health Managers and is designed to address local and regional environmental contaminants issues. The NFNECP is national in scope and is co-administered by the First Nations University (FNU) of Canada. The Assembly of First Nations (AFN) participates in the NFNECP as a member of the Steering Committee and as champion of the program. FNU, on behalf of the NFNECP Selection Committee issues the annual call for proposals. Received proposals are reviewed and undergo a selection process. Proposals that meet the requirements are then evaluated and rated by the First Nations led Selection Committee. RMS enters into funding agreements with successful NFNECP applicants to implement their research projects. Project results are communicated back to the communities through various media.

Northern Contaminants Program

RMS participates in and contributes funding to the health component of the Northern Contaminants Program (NCP), which conducts environmental contaminants research in the Arctic ecosystem. The Northern Contaminants Program was established in 1991 in response to concerns about human exposure to elevated levels of contaminants in fish and wildlife species that are important to the traditional diets of northern Aboriginal people. The program's key objective is working to reduce and, wherever possible, eliminate contaminants in traditionally harvested foods, while providing information that assists informed decision-making by individuals and communities in their food use. The NCP is directed by a Management Committee that is chaired by Indian and Northern Affairs Canada (INAC), and which includes representatives from four northern Aboriginal organizations (Council of Yukon First Nations, Dene Nation, Inuit Tapiriit Kanatami and Inuit Circumpolar Conference - Canada); the Yukon, Northwest Territories and Nunavut Territorial Governments; the Nunavut Nutrition and Health Committee; and four federal departments (Environment, Fisheries and Oceans, Health, and Indian and Northern Affairs). The Chief of RMS co-chairs the Human Health Technical Review Team.

Arctic Monitoring and Assessment Program

RMS participates in the Arctic Monitoring and Assessment Program (AMAP) via its Human Health Assessment Group. AMAP was established in 1991 in order to implement components of the Arctic Environmental Protection Strategy agreed upon by Ministers of eight Arctic countries (Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States). AMAP is one of the five working groups of the Arctic Council. AMAP's primary function is to provide advice on matters relating to threats to the Arctic region from pollution and associated issues. The Human Health Assessment Group is responsible for assessment of human health risks from environmental pollution of Arctic environments.

Community Exposure Assessments/ Targeted Research

RMS contributes to and participates in community exposure assessments and targeted research studies in collaboration with First Nations communities and provides expert technical assistance on research projects for regional environmental health offices and stakeholders. Assessments are conducted on an ad hoc basis, when determined to be important by the community and stakeholders, with consideration of the priority of the issue and available funding. Assessments conducted to date have focused on exposure to environmental contaminants such as mercury and polychlorinated biphenyls (PCBs) and often include the collection of eating pattern/diet surveys and human biomonitoring samples.

Traditional Foods Safety Program

The Primary Health Care and Public Health Directorate's involvement in nutrition and food safety is built on collaborative activities including participation in the Food and Nutrition Safety Initiative. Work undertaken as part of this initiative includes providing information on environmental contaminants in country/traditional foods. Traditional foods provide nutritional benefits and are also culturally, socially and economically important for many First Nations communities. However, issues such as avoidance of some traditional foods due to potential exposure to environmental contaminants are a concern. As well, the growing trend of Aboriginal populations to decrease consumption of traditional foods in favour of "western" market foods could contribute to increased health problems such as heart disease and diabetes.

To help address these concerns, RMS works towards effective knowledge translation and education by holding regional workshops on environmental contaminants and traditional foods to First Nations health directors, leaders, nurses and community designates. The goal of the workshops is to promote the importance and benefits of a traditional diet and to provide information regarding the potential health risks associated with consuming some traditional foods affected by environmental contaminants. The workshops also address risk perception and risk communication issues and provide a forum for local community-based research to be presented and discussed.

The Traditional Foods Safety Program also involves conducting or supporting targeted research and risk assessments of chemical exposure to contaminants of concern through consumption of various traditional/country food sources.

Other Core Activities

RMS is also engaged in working with other health protection branches of Health Canada and other government departments on a variety of issues such as:

- Health Canada Mercury Issues Task Group
- Interdepartmental Food Security Reference Group
- Participation in risk assessments of traditional food practices, in collaboration with the Bureau of Chemical Safety, Health Products and Foods Branch
- Canadian Environmental Assessment Act Review process (upon request)
- Canadian Environmental Protection Act Review process (upon request)

MAJOR ACCOMPLISHMENTS

Environmental Contaminants Research

National First Nations Environmental Contaminants Program

- Six community-based research projects were funded through the NFNECP in 2007-2008 totalling \$906,998.
- RMS collaborated with the FNUiv and the Selection Committee in the review of proposals and negotiated and administered contribution agreements for the six highest-rated projects.

Overview of NFNECP Project Funding 2007-2008

Project Title	Communities/Organizations	Amount Funded (\$)
Traditional environmental monitoring and risk communication project	Lesser Slave Lake Indian Regional Council	179,650
An Investigation of landfill emissions in assessing the potential for health impacts on communities within the Nlaka'pamux Nation	Nlaka'pamux Nation tribal Council	248,895
Siska salmon and human health project - Effects of environmental contaminants in upriver migration in the Fraser and Thompson river basins: toxicity and exposure levels	Siska Traditions Society	120,067
Traditional seafoods of Vancouver Island First Nations: Balancing contaminant risks and benefits in a community-oriented outreach project	Snuneymuxw First Nation and Institute of Ocean Science	74,900
Risk-benefit analysis of contaminants in First Nations communities drawing from off-the-land sources	Shibogama First Nation Council and the University of Ottawa	249,730
Fish contaminant assessment in the First Nation communities of Sachigo Lake & Slate Falls	Windigo First Nations Council	33,756
Total NFNECP Project Funding		906,998

- NFNECP project proposals underwent a science peer review with respect to scientific merit to help inform the project selection process.
- Environmental contaminants research conducted by these community-based project teams included assessing the extent and impact of different environmental contaminants in various media and included research on: risks and benefits of traditional marine and traditional off-the-land resources; contaminants assessment in freshwater fish; and investigation into the potential impacts of landfill emissions on human health.
- Technical support was offered to project teams in attaining research ethics approval for projects, as well as in data analysis when required. All 2007-2008 NFNECP projects requiring research ethics approval were approved by Health Canada's Research Ethics Board.
- Calls for Proposals for the next fiscal year (2008-2009) were developed and issued for the NFNECP in conjunction with FNUIniv.
- The Funding Application Guide that accompanies the national Call for Proposals was updated. The guide outlines the key principles of the program and includes guidelines for proposal format, budget and research ethics involving humans as well the criteria for selection of proposals.
- Furthering the goal of a solid policy foundation for the NFNECP, a draft Operational Management Guide for the program was developed. Consultation with key stakeholders and finalization of the guide is anticipated in 2008-2009.

Regional First Nations Environmental Contaminants Program

- The RFNECP is administered by Regional Environmental Health Managers of the First Nations and Inuit Health Branch. The regional program is designed to address local and regional environmental contaminants issues. RMS contributes up to a total of \$1,200,000 annually to the RFNECP, depending on the number of proposals from each region. The funding amount allocated to each region is based on the total First Nations population per region and the number of communities per region. Many of the regions contribute funds from their own budgets to enable more communities to participate in the program, but only RMS funds are included in this document.
- An additional \$199,500 was provided to the regions (\$28,500 per region) for local administrative costs associated with the program.

Overview of RFNECP Projects and Funding 2007-2008

Atlantic Region Projects – \$66,858 contributed by RMS

Development of educational material and application guide for Atlantic (Unama'ki Institute of Natural Resources)

First Nations River Keepers Preservation - Phase 3 (Mawiw Council)

Environmental Contaminants Affecting Pabineau and Eel Ground First Nations (Union of New Brunswick Indians)

Quebec Region Projects – \$112,000 (+\$60,656 from NFNECP residual funds) contributed by RMS

Pinagomin Nibi Acitc Kigos Clean Water and Fish Project (Eagle Village)

Ontario Region Projects – \$260,000 contributed by RMS

Impact of Road Salts and Human Pathogens on the St. Mary's River and the Root River (Garden River First Nation)

Baseline Biomonitoring Studies and Survey of Child-Youth Health as Prerequisites to Epidemiological Studies to Assess the Health Risk of the Walpole Island First Nation Community from Exposure to Environmental Contaminants (Walpole Island First Nation)

Feasibility Study of the Health Effects of Industrial Pollution in the Aamjiwnaang First Nation Community (Sarnia First Nation)

Sediment and Crayfish Sampling Follow-up to 2004/5 NFNECP Study (Grassy Narrows First Nation)

Manitoba Region – no proposals received

Saskatchewan Region – no proposals received

Alberta Region – no proposals received

Pacific Region Projects – \$247,060 contributed by RMS

Analysis of Potential Traditional Food Contaminants
(Cheslatta Carrier Nation)

Contaminant Investigation on Traditional Lands,
Phase 2 (Katzie First Nation)

Decontamination of Traditional Shellfish Resources
(Kwakiutl First Nation)

Assessing Metal Levels in the Tissues of Food-Wildlife Species
in the Babine Lakeshed (Lake Babine Nation)

Smalqmix Traditional Food and Medicinal Plant Contamination
(Lower Similkameen Indian Band)

Additional Testing for Contaminants in Fish used by First Nations
Members in the Okanagan Basin (Okanagan Nation Alliance)

Siska Salmon & Human Health Project (Siska Traditions Society)

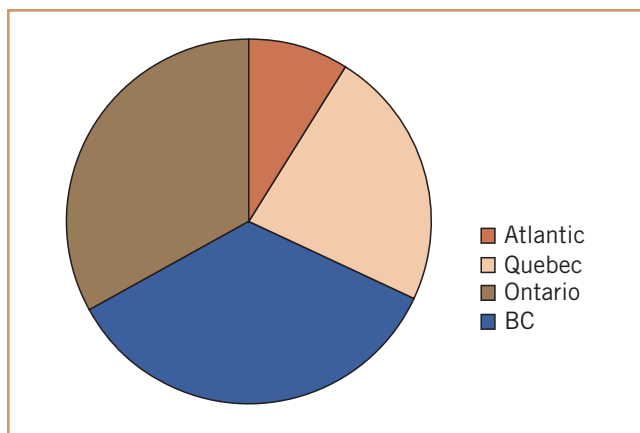
An Evaluation of Accumulated Analytical Data of Traditional
Food Sources (Tl'azt'en Nation)

Traditional Food Harvesting Program (Tseycum First Nation)

Marine Stewardship Program: Monitoring & Assessment
of Contaminants in Traditional Marine Foods
(Tsleil-Waututh Nation)

Presentation of research projects (Pacific region FNECP
annual conference)

RFNECP Funding by Region 2007-2008



Northern Contaminants Program

- The Chief of RMS co-chaired the NCP Human Health Technical Review Team, participated in the NCP proposal review and selection process and participated in the NCP Management Committee meetings held in Edmonton, Montreal and Iqaluit. Financial agreements were negotiated and administered for two research projects totalling \$401,090 in funding.
- Reports on the work of the Northern Contaminants Program including research synopsis and project summary reports as well as Canadian Arctic Contaminants Assessment reports can be accessed on the NCP website at <http://www.ainc-inac.gc.ca/nth/ct/ncp/pub-eng.asp#il>.

Arctic Monitoring and Assessment Program Human Health Assessment Group (AMAP HHAG)

- The Chief of RMS is a member of the AMAP HHAG in the role of a key national expert since 2004. HHAG was established in 1992 with the mandate to monitor human exposure levels of certain priority contaminants (POPs and heavy metals) in the Arctic. Publications produced by AMAP can be accessed at <http://www.ainc-inac.gc.ca/nth/ct/ncp/pub-eng.asp#amap>.
- RMS funded projects included examining long term effects of pre-and postnatal exposure to PCBs and mercury as well as to new emerging contaminants, and to evaluate if omega-3 fatty acids and selenium can protect against adverse health effects.
- The Chief of RMS represented Canada in AMAP HHAG meetings held in Lofoten, Norway (May 2007) and in Ottawa (June 2007), Progress was made in the RMS contributions to the 3rd *Human Health Assessment Report*. The release of this report is expected to coincide with the International Polar Year (IPY) in June 2009 in Iqaluit. Discussions also took place regarding the HHAG's participation in the Arctic Human Health Initiative and other IPY related activities.
- Environmental Research Division contributed funding to support the AMAP secretariat, which coordinates AMAP activities and productions.

Overview of Contributions to NCP Projects 2007-2008

Project Title	Organization	Amount Funded (\$)
Nunavik Cohort Study on Exposure to Environmental Contaminants and Child Development	Centre de Recherche du CHUL (CHUQ)	341,850
Effects of polychlorinated biphenyls and organochlorine pesticides or Labrador tea on Methylmercury induced toxicity	Healthy Environments and Consumer Safety Branch, Health Canada	59,240
Total NCP Project Contribution		401,090

Community Exposure Assessments/ Targeted research

- In 2006-2007, a risk assessment was undertaken in response to community concerns regarding contamination to shellfish and other traditional foods due to the sinking of the *Queen of the North* ferry in Hartley Bay, British Columbia in 2006. Risk assessment services were provided by the Bureau of Chemical Safety, Health Products and Food Branch, Health Canada. Health Canada engagement was led by the Regional Environmental Health Manager, Pacific Region. RMS contributed \$70,193 to this work.
- In June 2007, the Chief of RMS participated in a community meeting in Hartley Bay along with members of a multidisciplinary team to communicate the results of the assessment.

Traditional Foods Safety Program

- RMS funded the Council of Yukon First Nations (CYFN) in the amount of \$51,748 to host a workshop on Environmental Contaminants and Traditional Foods in Whitehorse, held in November 2007. Delegates from 28 First Nations communities from the Yukon and NWT, as well as Gwich'in elders from Fort McPherson and a representative from Inuvik participated in the workshop.
- A guide to conducting Environmental Contaminants and Traditional Foods Workshops developed by RMS was shared with the CYFN workshop organizers. The guide was developed to assist partner First Nations organizations in conducting these workshops.
- A workshop report was produced that included presentation summaries and results from interactive breakout sessions that explored perceived changes in consumption of traditional foods and environmental contaminant concerns. The effects of climate change on the safety, quality and quantity of traditional foods was a central theme in group break-out discussions during the workshop.

First Nations Food, Nutrition and Environment Study (FNFNES)

In 2007, RMS initiated the design of a multi-year First Nations Food, Nutrition and Environment Study to address the knowledge gap that currently exists on consumption rates, nutritional composition and environmental safety of traditional foods on First Nations reserves south of 60 degrees parallel.

RMS developed the first draft of the protocol and established linkages with researchers at the University of Northern British Columbia and the Université de Montréal and in 2007 funded the development phase of the study including final protocol development and consultation with First Nations partners. In July 2007, a resolution in support of the proposed study was unanimously passed by the Assembly of First Nations at their Annual General Assembly.

The proposed 10-year study plans to survey 100 randomly selected First Nations communities in ten provinces. The data will be used to estimate the total dietary intake of nutrients and contaminants from both traditional and market food. The results of the study will be communicated to First Nations communities to enable First Nations to make better informed decisions about the benefits and risks of the foods they are consuming.

Primary funding for the study is provided by RMS through its Traditional Food Safety Program. The Community Programs Directorate, First Nations and Inuit Health Branch is also contributing funds to facilitate assessment of usual nutrient intake and food security. Linkages are being explored with other potential internal and external partners to identify further opportunities for optimization of additional funding, expertise and quality of data collection. The environmental exposure components led by investigators in FNIHB include: mercury testing in hair, pharmaceutical metabolites in surface water and trace metals analysis of household tap water. It is anticipated that the first phase of data collection for the FNFNES will begin in the fall of 2008.

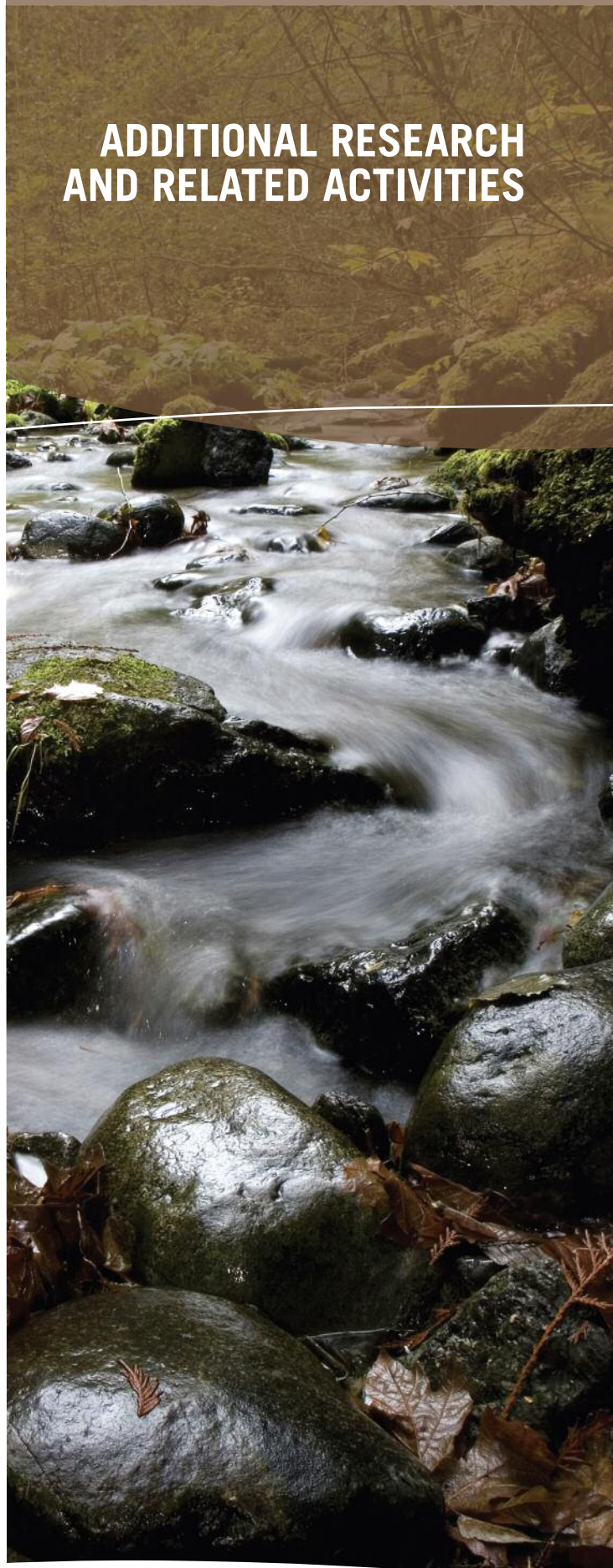


ADDITIONAL RESEARCH AND RELATED ACTIVITIES

- Building on momentum generated by a workshop of key stakeholders hosted by RMS in March 2007, RMS funded the establishment of the First Nations Environmental Health Innovation Network (FNEHIN). FNEHIN is a virtual network that links First Nations communities with environmental health researchers from across Canada. Its main functions are to provide First Nations with a single access point to environmental health researchers, information and research tools; to provide syntheses of the current state of knowledge on First Nations environmental health; and to facilitate knowledge mobilization for both First Nations communities/organizations and government policy makers for better informed decision making.
- RMS contributed \$99,385 in funding towards the FNEHIN secretariat housed at the National Collaborating Centre for Aboriginal Health, at UNBC in British Columbia. The secretariat's focus in this development phase is the organizational development of the network, the creation of a FNEHIN website, and establishing linkages with environmental health researchers and First Nations communities and organizations. Researchers are also developing 'State of Knowledge' reports on environmental health issues that will be posted on the FNEHIN website. The network and its website are due to be launched in 2008.

CASTS CONFERENCE 2007

- RMS provided funding in the amount of \$54,275 to the Canadian Aboriginal Science and Technology Society (CASTS) to support the national CASTS conference held in Calgary, Alberta in October 2007. The primary objective of the CASTS conference is to provide an opportunity for Canadian Aboriginal science and technology researchers to share their work with peers and to network in a national forum.
- RMS supported nine community-based research teams funded through the NFNECP in 2006 and 2007 to present the findings of their research at the CASTS 2007 conference. The conference was attended by over 700 delegates, including Elders, Aboriginal researchers and students, as well as representatives from communities, Aboriginal organizations, academia, and government. More information about CASTS can be accessed at <http://www.casts.ca/>.



Presentations of projects funded by the National First Nations Environmental Contaminants Program at the 2007 CASTS Conference

Presentation Title	Aboriginal Communities/Organizations	Presenters
Bridging the gap between environmental contaminants and the health of First Nations Communities	Federation of Saskatchewan Indian Nations	L. Bharadwaj, P. Johnston, I. Judd-Henrey, M. Greyyes, M Paul
Environmental contaminants in the marine foods of coastal First Nations in British Columbia: A community-oriented risk evaluation	Snuneymuxw Ahousaht, Pacheedaht, Snuneymuxw, Campbell River IB, and Quatsino First Nations	T. Child, N.J. Turner, P.S. Ross
Moving towards the remediation of fifteen abandoned Mid-Canada Line Radar sites in Mushkegowuk Territory	Mushkegowuk Council	B. Hunter, J. Simard
The Mid-Canada Radar Line environmental contaminants project	Fort Albany First Nation and Weenusk First Nation	L. Tsuji
Tahltan environmental contaminants project	Tahltan and Iskut First Nations	N. Morin, C. Ratray
Risk assessment of shellfish consumption in coastal communities in British Columbia	Hul'qumi'num Treaty Group	T. Kulchyski
Rainy River Watershed Program Environmental Contaminants Project	Rainy River First Nations	A. Scott, J. Hunter-Connon
Fish farms and contaminant levels in First Nations traditional marine resources	British Columbia Aboriginal Fisheries Commission	A. Mazumder, R. Mountain
The impacts of environmental contamination on Hollow Water First Nation and the Metis Community of Manigotagan	Hollow Water First Nation and the Metis community of Manigotagan	P. Sellers

- At the 2007 Health Canada Science Forum held in Ottawa in October, the Chief of RMS was invited to give a plenary presentation entitled "Exploring Environmental Contaminants Influences on First Nations Health". The Forum, hosted by the Office of the Chief Scientist, gives Health Canada's researchers and scientists an opportunity to present and discuss their work. The presentation reflected on environmental health research undertaken in Canadian Aboriginal communities in the last 30 years, the value of community-based research and capacity building and future directions in the field.

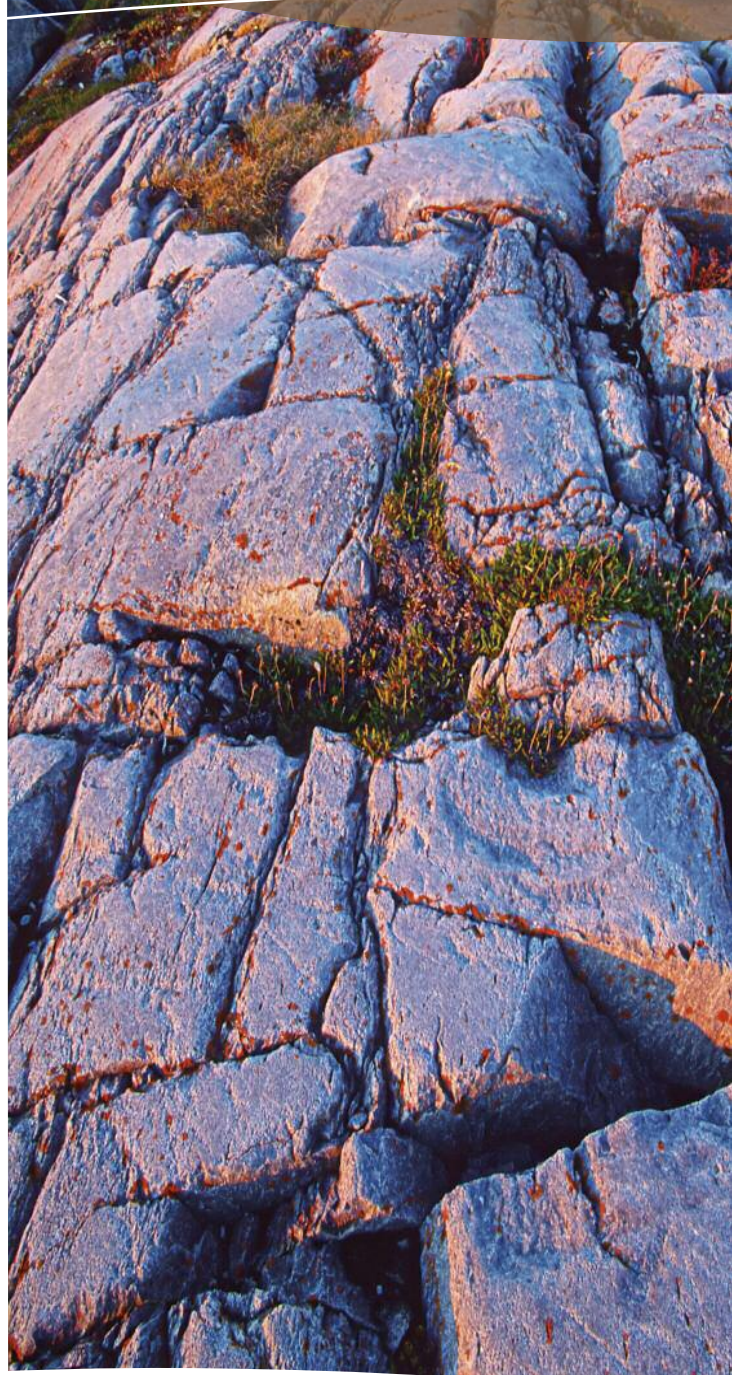
An RMS student-led poster was also presented at the Science Forum that described the number and types of community-based research projects funded by the National First Nations Environmental Contaminants Program from 2000-2006.

- RMS continues to work with a US non-profit organization, The Lifeline Group, to modify existing probabilistic risk assessment software that characterizes population-based exposures and risks from chemical substances in food and other media. The goal is to assess these tools for applicability in First Nations and Inuit populations with diets largely composed of traditional foods. As part of the evaluation of the applicability of Lifeline products in a Canadian context, a case study analysis is being conducted to compare the Lifeline software with existing methodologies currently employed in Health Canada.
- RMS contributed to the 3rd edition of the Environmental Research Division's newsletter *Environmental Research Matters*, published in October 2007 highlighting the 2nd annual results conference of the Regional First Nations Environmental Contaminants Program's in British Columbia. The newsletter's target audience is the Regional Environmental Health Managers and Environmental Health Officers as well as other Divisions of the Primary Health Care and Public Health Directorate, and other regional staff who are working on environmental research/health related issues.

PRIORITIES AND PLANS FOR 2008-2009

Below are some of the goals the RMS is working to achieve in the coming year:

- Continue successful collaboration on environmental contaminants research on reserves with the AFN and with First Nations across Canada;
- Continue to work with the FNUiv in the co-administration of the NFNECP;
- Building on the solid policy foundation of the NFNECP, continue to improve tools such as the Funding Application Guide; finalize the Operational Management Guide for the program, and continue to encourage research capacity-building among First Nations;
- Continue efforts to synthesize existing research data and information collected on the impact of environmental contaminants on human health and engage interested and affected parties through the dissemination of research results and identification of gaps in areas of research and information, so that other First Nations communities can benefit from the knowledge derived from the completed projects;
- Through the National First Nations Environmental Contaminants and Northern Contaminants Programs and initiatives such as the First Nations Food, Nutrition and Environment study, together with First Nations and Inuit partners and researchers, continue to explore ways of assessing the integrity of traditional foods on First Nations reserves and in Inuit communities across Canada with a goal to determining baseline levels of environmental contaminants in traditional foods;
- Work toward effective knowledge translation, education and awareness with respect to the benefits of traditional foods, and to potential exposure to environmental contaminants, by contributing to and participating in the First Nations Environmental Health Innovation Network and conducting one or more Environmental Contaminants and Traditional Foods Workshops in the regions and territories;
- Continue to contribute to the human health research components of the NCP and of AMAP;
- Continue to respond to requests for information and action requests that are presented by First Nations, senior management of Health Canada, and other federal departments.



ORGANIZATIONAL CHART

